

**REMARKS**

The indication by the Examiner of allowable subject matter in claims 3-10, 12, 14-19, 23-25, 27 and 29-34 is gratefully acknowledged.

Reconsideration of the rejection of the other claims under 35 USC 103 as being unpatentable over Leek in view of Fanucci et al. is respectfully requested. The present invention is directed to a method of testing a seismic brace and to a method of testing a seismic brace component comprising applying a load to the brace or component in a number cycles, wherein the number of cycles in which the load is applied is based on the real-life records of at least one building during an actual earthquake. In paragraph 0007 on page 2 of the application, in the SUMMARY OF THE INVENTION, it is disclosed that, in the present invention, strong-motion records from severely shaken buildings are incorporated into a low-cycle fatigue model to develop a simple, yet rational protocol for determining the seismic strength of sprinkler pipe sway-brace components. In a disclosed embodiment, the acceleration history at the roof of a 6-story hospital building shaken by the 1994 Northridge, California earthquake is shown in Fig. 2a (page 6, paragraph 0041). When an effective horizontal stiffness is assumed, the acceleration history of Fig. 2a yields the deformation history of Fig. 2b (paragraph 42). Also in the disclosed embodiment, the application of Equation 5 on page 8 to the deformation history of Fig. 2b results in the uniform-amplitude deformation history of Fig. 3.

As can be appreciated from paragraph 0056 on page 10 of the application, in order to provide a more general applicability of the model, the strong-motion records from a plurality of buildings of various structural types are incorporated into the model. In the illustrated embodiment, all of the records are strong-motion records of buildings during the 1994 Northridge, California earthquake. The average spectra of the roof motions from these buildings

are shown in Fig. 7, and the histogram for the number of cycles is shown in Fig. 8 (page 11, paragraph 59). The number of cycles for which the load is to be applied is determined from Fig. 8, as is described in paragraph 0060 beginning on page 11.

By the present amendment, the independent claims in the application, claims 1 and 20, have been amended to recite applying a load to the brace component in uniform-amplitude cycles simulating the forces due to an earthquake, wherein the number of uniform-amplitude cycles applied is based on the record of acceleration with respect to time of at least one building during an earthquake. As was described above, information recorded during an earthquake is used in determining the number of cycles for which a load is to be applied.

In contrast to the recited method, cyclic tests simulating earthquake loads that were previously proposed were based primarily on judgment. The method of claims 1 and 20 differs from the previous tests, because it is scientifically derived from actual strong-motion measurements in buildings. The Leek and Fanucci et al. references, whether considered individually or in combination, fail to disclose the method of claims 1 and 20 for at least the reason that they fail to disclose basing the method on information recorded during an earthquake.

New claim 35 depends on claim 1 and calls for the number of uniform-amplitude cycles applied to be based on the records of acceleration with respect to time of a plurality of buildings during an earthquake. New claim 36 depends on claim 35, and calls for the number of uniform-amplitude cycles applied to be based on the records of acceleration with respect to time of a plurality of buildings during the same earthquake. New claim 37 is like claim 35, but depends on claim 20, and new claim 38 is like 36, but depends on claim 37.


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In view of the foregoing, applicants submit that all the claims presently pending in the application are allowable and that the application is in condition for allowance. An early notice to that effect is respectfully requested.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0562.

Respectfully submitted,

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